

**What is claimed is:**

1           1. A biodegradable porous device, comprising:  
2           a porous polymeric scaffold comprising a co-continuous  
3 phase of a first biodegradable polymer and a second  
4 biodegradable polymer which are incompatible with each other,  
5 wherein the first biodegradable polymer contains a  
6 continuous network of large, interconnected pores, and the  
7 second biodegradable polymer contains small, partially  
8 interconnected pores;

9           a biodegradable polymer fiber dispersed in, and  
10 compatible with the matrix of the first biodegradable  
11 polymer; and optionally

12          an active ingredient provided in the polymeric scaffold.

1           2. The biodegradable porous device as claimed in claim  
2 1, wherein the first biodegradable polymer has a higher  
3 biodegradation rate than the second biodegradable polymer  
4 and the biodegradable polymer fiber.

1           3. The biodegradable porous device as claimed in claim  
2 1, wherein the first biodegradable polymer has a higher  
3 porosity than the second biodegradable polymer.

1           4. The biodegradable porous device as claimed in claim  
2 3, wherein the first biodegradable polymer has a porosity  
3 greater than about 95%, and the second biodegradable polymer  
4 has a porosity of about 85 to 95%.

1           5. The biodegradable porous device as claimed in claim  
2 1, wherein the large pores have an average pore diameter  
3 between about 30 and 250  $\mu\text{m}$ , and the small pores have an  
4 average pore diameter between about 1 and 50  $\mu\text{m}$ .

1           6. The biodegradable porous device as claimed in claim  
2 1, wherein the first biodegradable polymer is selected from  
3 the group consisting of proteins, polysaccharides, synthetic  
4 materials, and mixtures or copolymers thereof.

1           7. The biodegradable porous device as claimed in claim  
2 1, wherein the second biodegradable polymer is selected from  
3 the group consisting of proteins, polysaccharides, synthetic  
4 materials, and mixtures or copolymers thereof.

1           8. The biodegradable porous device as claimed in claim  
2 1, wherein the biodegradable polymer fiber is selected from  
3 the group consisting of proteins, polysaccharides, synthetic  
4 materials, and mixtures or copolymers thereof.

1           9. The biodegradable porous device as claimed in claim  
2 1, wherein the active ingredient is provided predominately  
3 in the matrix of the second biodegradable polymer.

1           10. The biodegradable porous device as claimed in claim  
2 1, wherein the polymeric scaffold comprises an effective  
3 amount of a biologically active substance that either  
4 promotes or prevents a particular variety of cellular tissue  
5 ingrowth.

1           11. The biodegradable porous device as claimed in claim  
2 1, wherein the polymeric scaffold comprises an effective  
3 amount of a pharmaceutically active compound.

1           12. A biodegradable porous device, comprising:  
2 a porous polymeric scaffold comprising a co-continuous  
3 phase of a first biodegradable polymer and a second  
4 biodegradable polymer which are incompatible with each other,

5 wherein the first biodegradable polymer contains a  
6 continuous network of large, interconnected pores with an  
7 average pore diameter between about 30 and 250  $\mu\text{m}$ , the  
8 second biodegradable polymer contains small, partially  
9 interconnected pores with an average pore diameter between  
10 about 1 and 50  $\mu\text{m}$ , and the first biodegradable polymer has a  
11 higher biodegradation rate than the second biodegradable  
12 polymer;

13 a biodegradable polymer fiber dispersed in, and  
14 compatible with the matrix of the first biodegradable  
15 polymer; and

16 an active ingredient provided predominately in the  
17 matrix of the second biodegradable polymer.

1 13. The biodegradable porous device as claimed in claim  
2 12, wherein the first biodegradable polymer has a higher  
3 porosity than the second biodegradable polymer.

1 14. The biodegradable porous device as claimed in claim  
2 13, wherein the first biodegradable polymer has a porosity  
3 greater than about 95%, and the second biodegradable polymer  
4 has a porosity of about 85 to 95%.

1 15. The biodegradable porous device as claimed in claim  
2 12, wherein the first biodegradable polymer is gelatin and  
3 the second biodegradable polymer is collagen.

1 16. The biodegradable porous device as claimed in claim  
2 15, wherein the biodegradable polymer fiber is made of a  
3 synthetic polymer selected from the group consisting of  
4 polyvinyl alcohol (PVA), polyglycolic acid (PGA), polylactic  
5 acid (PLA), poly(glycolic-co-lactic acid) (PLGA), and  
6 polycaprolactone (PCL).

1           17. The biodegradable porous device as claimed in claim  
2   12, wherein the polymeric scaffold comprises an effective  
3   amount of a biologically active substance that either  
4   promotes or prevents a particular variety of cellular tissue  
5   ingrowth.

1           18. The biodegradable porous device as claimed in claim  
2   12, wherein the polymeric scaffold comprises an effective  
3   amount of a pharmaceutically active compound.